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10/568,003	02/04/2008	Kevin Lloyd Grimes	PU030240	5841
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EXAMINER HERZOG, MADHURI R				
ART UNIT 2438		PAPER NUMBER		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/568,003

**Applicant(s)**

GRIMES, KEVIN LLOYD

**Examiner**

MADHURI HERZOG

**Art Unit**

2438

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 February 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-22 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 10 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/GS-08)  
Paper No(s)/Mail Date 02/10/2008

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Claims 1-22 have been examined and are pending.

#### ***Priority***

Acknowledgement is made of the applicants' claim to priority to the provisional application 60/494,835 entitled "Pre-processing of Descrambling Data to Reduce Channel-Change Time", filed on August 13, 2003 under 35 U.S.C § 119(e).

#### ***Information Disclosure Statement***

An initialed and dated copy of Applicant's IDS form 1449 filed on February 10, 2006 is attached to the instant office action.

#### ***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-16 are rejected under 35 U.S.C. 102(e) as being anticipated by US 2004/0086127 to Candelore (hereinafter Candelore).

**As per claim 1**, Candelore teaches:

A receiver (**Candelore: Fig. 1**) comprising:

two or more tuned channels, utilizing a programmed means to respond to a user's request for a selected one of the two or more tuned channels by causing one of a

set of descrambling keys for the selected channel to be outputted, in accordance with the associated descrambled digital transport streams required to format information into a selected video display (**Candelore: Fig. 1, 4 and para [0033], [0036], [0062]-[0064]:**

**The digital device 110 is implemented as a set-top box and it was well known in the art at the time the invention was made, that a set-top box comprises of a programmed means that responds to a user's request for one or more tuned channels. Headend 410 delivers service keys on per channel basis. The service key is used by a processor 430 as needed when tuning to different channels. The service key is used to decrypt the descrambling keys that in turn descramble the content and the content is then presented through the display 160 in a perceivable format).**

**As per claim 9, Candelore teaches:**

**A method of video transmission reception (Candelore: para [0003]: The invention relates to a method for descrambling received digital content) comprising:**

**tuning and decoding a digital transmission to produce a set of descrambling keys associated with two or more tuned channels (Candelore: Fig. 4 and para [0062]: Headend 410 delivers service keys on a per channel basis. The service keys are used to decrypt the descrambling keys that received in-band with the content (tuning and decoding a digital transmission)); and**

programming a means to respond to a user's request for a selected one of the two or more tuned channels by causing the set of descrambling keys for the selected channel to be outputted, to descramble digital transport streams required to format digital information into a video display (**Candelore: Fig.1, 4 and para [0033], [0062]-[0064]: The digital device 110 is implemented as a set-top box and it was well known in the art at the time the invention was made, that a set-top box comprises of a programmed means that responds to a user's request for one or more tuned channels. The service key is used by a processor 430 as needed when tuning to different channels. The service key associated with the required channel will decrypt the descrambling keys that are received in-band with the content. The scrambled content is then descrambled using the descrambling keys).**

**As per claims 2 and 10, Candelore teaches:**

The receiver in claim 1 and the method of reception in claim 9, wherein the set of descrambling keys are stored in a memory (**Candelore: Fig. 2 and para [0050]: The smart card 210 (memory) stores the descrambling keys in the encrypted format).**

**As per claims 3 and 11, Candelore teaches:**

The receiver in claim 1 and the method of reception in claim 9, wherein the set of descrambling keys are compared, in a program selection mode of operation, to identify a desired digital transport stream (**Candelore: para [0042] and [0043]: Each program is accompanied by entitlements that includes one or more descramble keys.**

**Thus, based on the entitlements, proper keys are selected to descramble the program selected to be viewed) .**

**As per claim 4, Candelore teaches:**

The receiver in claim 2, wherein the set of descrambling keys are retrieved from the memory, responsive to selected one of the two or more tuned channels **(Candelore: para [0042] and [0050]: When a program is selected to be viewed, the descrambling keys that are stored in the smart card are transmitted to the smart card interface to be used in descrambling content).**

**As per claim 12, Candelore teaches:**

The method of reception in claim 10, further comprising retrieving the set of descrambling keys from the memory **(Candelore: para [0042] and [0050]: When a program is selected to be viewed, the descrambling keys that are stored in the smart card are transmitted to the smart card interface to be used in descrambling content),** the stored portion of the descrambling keys comparing favorably to the desired digital transport stream **(Candelore: para [0042] and [0043]: Each program is accompanied by entitlements that includes one or more descramble keys. Thus, based on the entitlements, the descrambling keys compare favorably to the desired program selected to be viewed).**

**As per claims 5 and 13, Candelore teaches:**

A receiver (**Candelore: Fig. 1**) and a method of reception (**Candelore: para [0003]: The invention relates to a method for descrambling received digital content**) comprising:

a tuning and a decoding unit for tuning and decoding a digital transmission to produce a set of control words related to two or more tuned channels each associated with a descrambling key (**Candelore: Fig. 2 and para [0041]-[0042] and [0053]: When a scrambled program is received by the conditional access unit 110, the decryption logic 260 of the descrambler IC 240 uses one or more unique keys (control words) stored in the storage element 250 to decrypt the descrambling key DK associated with the scrambled content. The descrambler logic 270 (tuning and decoding unit) then descrambles the content and presents it for viewing**);

a programmed means to respond to a user's request for a selected one of the two or more tuned channels by causing one of the control words within the set of control words to generate a descrambling key for the selected channel to be outputted, to descramble digital transport streams required to format digital information into a video display (**Candelore: Fig. 1, 2 and para [0033], [0053]: The digital device 110 is implemented as a set-top box and it was well known in the art at the time the invention was made, that a set-top box comprises of a programmed means that responds to a user's request for one or more tuned channels. The digital device 110 also comprises of a receiver 111 that receives incoming data in the scrambled form. Then, the decryption logic 260 of the descrambler IC 240 uses one or more unique keys (control words) stored in the storage element 250 to**

**decrypt the descrambling key DK associated with the scrambled content. The descrambler logic 270 then descrambles the content and presents it through the display 160 in a perceivable format).**

**As per claims 6 and 14, Candelore teaches:**

The receiver in claim 5 and the method of reception in claim 13, wherein the set of control words are stored in a memory (**Candelore: Fig. 2 and para [0053]: The one or more unique keys that are used to decrypt the descrambling key are stored in the storage element 250).**

**As per claim 7, Candelore teaches:**

The receiver in claim 5, wherein the set of control words are compared, in a program selection mode of operation, to identify a desired digital descrambling key stream (**Candelore: Fig. 4 and para [0062]-[0064]: Headend 410 delivers one or more service keys (control words) on a per channel basis (identifying the desired descrambling key stream). The service keys are used to decrypt the required descrambling keys).**

**As per claim 15, Candelore teaches:**

The method of reception in claim 13, further comprising comparing the set of control words in a program selection mode of operation, to identify a desired digital transport stream (**Candelore: Fig. 4 and para [0062]-[0064]: Headend 410 delivers**



**one or more service keys (control words) on a per channel basis (identifying the desired digital transport stream)).**

**As per claims 8 and 16, Candelore teaches:**

The receiver in claim 6 and the method of reception in claim 13, wherein the set of control words are retrieved, from the memory, the stored portion of the control words comparing favorably to the descrambling key means associated with the desired digital transport stream **(Candelore: Fig. 4 and para [0064]: The service keys (control words) are delivered on a per channel basis and are used to decrypt the descrambling keys that received in-band with the content. Therefore, the service key for a particular channel will compare favorably to the descrambling keys that come with the content on that channel).**

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,933,192 to Crosby et al (hereinafter Crosby) and Candelore.

**As per claim 17**, Crosby teaches:

A method of reception (**A multi-channel digital video receiver and method are presented**) comprising the steps of:

determining a potential viewing channel (**Crosby: column 1, lines 54-67: The receiver includes a tuning unit with two or more tuner modules. While one tune tunes to the channel currently selected by the user, the other tuner tunes to a next predicted channel (determining a potential viewing channel)**);

determining if all channels having the potential for viewing (have had the respective descrambling keys) decoded and if all channels having the potential for viewing (have not had the respective descrambling keys decoded) then continuing to monitor a digital transmission (for a new control word), as required in time-varying broadcast (**Crosby: column 2, lines 19-30, column 4, lines 11-19 - column 6, lines 12-34: The microcontroller predicts the next channel based on the user's previous channel change commands. The predicted channels are decoded by decoder modules such as decoder module B. The microcontroller regularly evaluates the user's experiences in channel changes and continually predicts the next channel based on the evaluation**).

Crosby teaches predicting the channels that a user will view in the future and decoding the predicted channels. Therefore, it is inherent from this that any keys associated with the predicted channels will be first decoded. However, Crosby does not explicitly teach decoding a decoding key, storing the decoding key in a memory and monitoring a digital transmission for a new control word. Candelore teaches:

decoding a decoding key associated with the potential viewing channel  
**(Candelore: Fig. 2 and para [0053]: The decryption logic of the descrambling IC 240 decrypts the descrambling key DK (decoding the decoding key) using one or more unique keys);**

storing the decoding key in a memory retrievable in the event the potential viewing channel is selected by a user **(Candelore: Fig. 2 and para [0053]: The decryption logic writes (stores) decrypted DK into the odd and even key storage elements from where they can be retrieved and applied to the incoming scrambled content at the right time);**

monitoring a digital transmission for a new control word **(Candelore: para [0042]: When a scrambled content is received by the conditional access system, the entitlements are continually checked (monitored) to ensure that the user has access rights to view the content. The entitlements include the keys (control words) required to descramble the content. Therefore, by continually checking for entitlements, the keys are also continually checked).**

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teachings of Candelore in the invention of

Crosby to include decoding a decoding key, storing the decoding key in a memory and monitoring a digital transmission for a new control word. The motivation to do so would be to enable the receiver to recover data in the clear from the scrambled format based on the entitlements granted (Candelore: para [0037]).

**As per claim 18**, Crosby in view of Candelore teaches:

The method of reception in claim 17, further comprising the step of retrieving the descrambling key associated with a selected viewing channel (**Candelore: para [0050]: The descrambling keys are retrieved from the smart card 210**).

The examiner provides the same rationale to combine references Crosby and Candelore as in claim 20 above.

**As per claim 19**, Crosby in view of Candelore teaches:

The method of reception in claim 18, further comprising the step of utilizing the descrambling key associated with a selected viewing channel to assemble digital data (**Candelore: para [0053] and [0063]: The descrambling key DK that is received for the content is used to descramble the scrambled content**).

The examiner provides the same rationale to combine references Crosby and Candelore as in claim 20 above.

**As per claim 20**, Crosby teaches:

A method of reception (**A multi-channel digital video receiver and method are presented**) comprising the steps of:

determining a potential viewing channel (**Crosby: column 1, lines 54-67: The receiver includes a tuning unit with two or more tuner modules. While one tune tunes to the channel currently selected by the user, the other tuner tunes to a next predicted channel (determining a potential viewing channel)**);

determining if all channels having the potential for viewing (have had the control word decoded) and if all channels having the potential for viewing (have not had the respective control word decoded) then continuing to monitor a digital transmission for a (new control word), as required in time-varying broadcast (**Crosby: column 2, lines 19-30, column 4, lines 11-19 - column 6, lines 12-34: The microcontroller predicts the next channel based on the user's previous channel change commands. The predicted channels are decoded by decoder modules such as decoder module B. The microcontroller regularly evaluates the user's experiences in channel changes and continually predicts the next channel based on the evaluation**).

Crosby teaches predicting the channels that a user will view in the future and decoding the predicted channels. Therefore, it is inherent from this that any control words associated with the predicted channels will be first decoded. However, Crosby does not explicitly teach decoding a control word, storing the control word in a memory and monitoring a digital transmission for a new control word. Candelore teaches:

decoding a control word associated with the potential viewing channel  
(**Candelore: Fig. 4 and para [0062], [0064]: Headend 410 delivers service keys**

**(control words) on a per channel basis. The service keys are decrypted within the Descrambler IC 440 using the Unique key stored in the storage element 450);**

storing the control word in a memory retrievable in the event the potential viewing channel is selected by a user **(Candelore: para [0064]: The service keys (control words) are stored locally in the decoder 401 and are used by a processor 430 as needed when tuning to different channels);**

monitoring a digital transmission for a new control word **(Candelore: para [0036], [0037] and [0064]: The service keys are delivered in the EMMs. When a scrambled content is received by the conditional access system, the entitlements such as EMMs are continually checked (monitored) to ensure that the user has access rights to view the content. Therefore, by continually monitoring for new entitlements, the service keys (control words) are also continually monitored and updated).**

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teachings of Candelore in the invention of Crosby to include decoding a decoding key, storing the decoding key in a memory and monitoring a digital transmission for a new control word. The motivation to do so would be to enable the receiver to recover data in the clear from the scrambled format based on the entitlements granted (Candelore: para [0037]).

**As per claim 21, Crosby in view of Candelore teaches:**

The method of reception in claim 20, further comprising the step of retrieving the control word to descramble a key associated with a selected viewing channel

**(Candelore: para [0063]: The service key (control word) is used to decrypt one or more descrambling keys that are received in-band with the scrambled content).**

The examiner provides the same rationale to combine references Crosby and Candelore as in claim 20 above.

**As per claim 22**, Crosby in view of Candelore teaches:

The method of reception in claim 21, further comprising the step of utilizing the control word to descrambling a key associated with a selected viewing channel to assemble digital data **(Candelore: para [0036] and [0063]: The service key (control word) is used to decrypt one or more descrambling keys that are received in-band with the scrambled content. The decrypted descrambling keys are then used to descramble content to be presented to in a perceivable format).**

The examiner provides the same rationale to combine references Crosby and Candelore as in claim 20 above.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 6,714,264 to Kempisty teaches tuning to the next channel in the sequence in anticipation of a subsequent channel switch.

US 6,927,806 to Chan teaches a digital STP that is incorporated with a channel look-ahead capability in which one or more digital tuners tune to and decode a next video channel based upon information taken from a subscriber's usage history and information obtained from average subscriber behavior.

Relevant art made of record:

US 2005/0201559 to Van Der Heijden teaches predicting a channel that user might want to see and decrypting and storing the latest control word associated with the predicted channel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MADHURI HERZOG whose telephone number is (571)270-3359. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Taghi Arani can be reached on 571-272-3787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MADHURI HERZOG/  
Examiner, Art Unit 2438  
/Taghi T. Arani/  
Supervisory Patent Examiner, Art Unit 2438